



FARELLA BRAUN + MARTEL LLP

Attorneys At Law

Russ Building / 235 Montgomery Street
San Francisco / CA 94104

T 415.954.4400 / F 415.954.4480
www.fbm.com

PAUL P. "SKIP" SPAULDING, III
sspaulding@fbm.com
D 415.954.4918

November 2, 2007

Via Electronic Mail, Facsimile and U.S. Mail

Kenneth Landau
Dave Carlson
James D. Marshall
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive #200
Rancho Cordova, California 95670

**Re: Meridian Beartrack Company, Royal Mountain King Mine
Tentative Draft Waste Discharge Requirements Order and NPDES Permit**

Dear Messrs. Landau, Carlson and Marshall:

This letter contains the separate comments of Meridian Beartrack Company ("Meridian") on the tentative draft NPDES permit, with attachments and fact sheet, issued by the Central Valley Regional Water Quality Control Board ("Regional Board") on October 2, 2007 for the Royal Mountain King Mine ("RMKM") site.

Meridian has also submitted, contemporaneously with this comment letter, a joint set of comments with the California Sportfishing Protection Alliance ("CSPA") on this permit. In those comments, Meridian and CSPA jointly request that five identified sets of provisions be incorporated into the permit and/or fact sheet. The comments contained in this letter are the separate comments of Meridian on the proposed permit and they are intended as a supplement to the joint comments. These supplemental comments are only submitted to preserve various issues raised by Meridian in the event that staff or the Board decides not to amend the NPDES permit as jointly proposed by Meridian and CSPA. Both parties believe that the proposed changes set forth in the joint comments will improve on the quality of the draft permit and, if adopted without other permit changes, will suffice for the parties to drop any objections they may have to the initial issuance of the permit.

Should staff and/or the Regional Board not be amenable to the jointly proposed amendments, or should the staff and/or Board modify the permit in any other respect before its



Kenneth Landau
Dave Carlson
James D. Marshall
November 2, 2007
Page 2

adoption, Meridian requests that the staff and Board address each of the following deficiencies in the draft permit:

SPECIFIC MERIDIAN COMMENTS

1. **Permit, Table 5 on page 7:** The current site WDRs acknowledge that baseline/pre-mine surface and ground water quality did not meet the water quality objectives for all of the beneficial uses designated in the Basin Plan (Findings 22 through 25 of CVRWQCB Order No. 5-01-040). Meridian believes that this is important contextual information for this NPDES permit and specifically requests that this language be incorporated into this table. We have the same comment for Page F-12 and Table F-7 of the fact sheet.
2. **Permit, ¶ VI.C.3.a and 3.b:** Meridian requests that the “Salinity Evaluation and Minimization Plan” and the “Surface Water Discharge Minimization Plan” be combined into one “System Performance Report” and that this Report be delivered two years after the effective date of the permit in order to assure that sufficient data is available. This report would evaluate the effectiveness of the system in meeting objectives, assess whether further measures to control surface flows are required and confirm some of the operational parameters such as mixing ratios.
3. **Monitoring and Reporting Program, ¶ V.A.3:** Based on site conditions, the rainbow trout is not an appropriate test species for the WET testing. The stream in the vicinity of the site is intermittent and shallow. Except during the winter, the water is very warm. No trout or other cold water species have been identified at the site during previous biological/habitat assessments. There are significant downstream barriers (including the dam at Flowers Reservoir) and other environmental factors that prevent use of Littlejohn’s Creek by fish migrating upstream. The current beneficial use designations of this reach of Littlejohn’s Creek as cold freshwater habitat and cold/warm migration of aquatic organisms are not accurate or appropriate and should be deleted. Accordingly, Meridian specifically requests that the draft permit be modified to substitute fathead minnows for trout for purposes of the acute and chronic toxicity testing, based on the warm water habitat at the site and the lack of presence of cold water species such as trout.
4. **Monitoring and Reporting Program, ¶ VIII.B and Table E-5:** Meridian requests that the draft permit be modified to delete any required monitoring at location RSW-003 (SWM-003). This location is at the outlet of Flowers Reservoir, which is subject to a wide variety of other influences, and therefore is not a reliable indicator of the potential influence of Meridian’s discharge.



Kenneth Landau
Dave Carlson
James D. Marshall
November 2, 2007
Page 3

GENERAL MERIDIAN COMMENTS

Meridian provides the following general comments regarding the tentative draft NPDES permit and accompanying fact sheet:

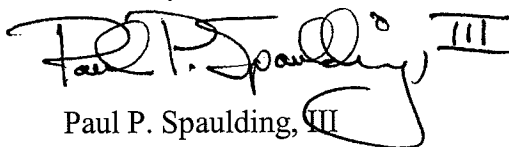
Meridian attaches hereto as Exhibit "A" and incorporates herein by reference its September 26, 2007 comment letter on the preliminary draft permit. To the extent that the Regional Board staff has already made the changes that Meridian requested in its "Specific Meridian Comments" on pages 2-5 of this comment letter, those particular comments are no longer applicable. However, to the extent changes therein have not been made in this draft permit, Meridian specifically reasserts for this tentative draft permit the remaining specific comments set forth in that letter.

Meridian also reasserts as comments in response to this preliminary draft permit the "General Meridian Comments" set forth on pages 5-16 of the September 26, 2007 comment letter. These comments respond to issues raised by CSPA during discussions between Meridian and CSPA relating to the permit. To the extent that the Regional Board contemplates or decides to include in the final NPDES permit any new or modified provisions based on or relating to the issues discussed in these comments, the Board should specifically consider these comments.

Finally, Meridian has not reviewed the separate written comments on the tentative draft permit, including attachments, that CSPA intends to submit to the Regional Board on November 2, 2007. However, Meridian believes that none of the permit changes requested by CSPA in that separate letter should be made to this draft permit. Except as set forth in Meridian's separate comments herein, Meridian believes that the terms of the draft permit conform fully with applicable laws, regulations and guidance documents. Meridian also requests an advance opportunity to respond to these separate CSPA comments if the Regional Board staff or Board itself are seriously considering their incorporation into the permit.

Please let Tom Patterson of SES or me know if you would like to discuss any aspect of these comments.

Sincerely,



Paul P. Spaulding, III

PPS:bd
Attachment



Kenneth Landau
Dave Carlson
James D. Marshall
November 2, 2007
Page 4

cc: Mr. Edgar Smith
Mr. Ian Hutchison
Mr. Tom Patterson
Darlene Ruiz, Esq.
Bill Jennings
Michael Lozeau, Esq.



FARELLA BRAUN + MARTEL LLP

Attorneys At Law

Russ Building / 235 Montgomery Street
San Francisco / CA 94104

T 415.954.4400 / F 415.954.4480
www.fbm.com

PAUL P. "SKIP" SPAULDING, III
sspaulding@fbm.com
D 415.954.4918

September 26, 2007

Via Facsimile (916-464-3291), Electronic Transmission and Mail

James D. Marshall, P.E.
Senior Engineer
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive #200
Rancho Cordova, California 95670

Re: Meridian Beartrack Company, Royal Mountain King Mine
Preliminary Draft Waste Discharge Requirements Order and NPDES Permit

Dear Mr. Marshall:

This letter contains the comments of Meridian Beartrack Company ("Meridian") on the preliminary draft Waste Discharge Requirements Order and NPDES permit issued by the Central Valley Regional Water Quality Control Board ("Regional Board") on September 4, 2007 for the Royal Mountain King Mine ("RMKM") site.

Meridian has included two types of comments in this letter. The first set (which immediately follow the next paragraph) provide individual comments on particular sections of the proposed permit and fact sheet. The second set of comments (which start after the specific comments) arise from a collaborative process that Meridian is engaging in with the California Sportfishing Protection Alliance ("CSPA") as part of a lawsuit settlement agreement. Meridian and CSPA have discussed the tentative draft permit terms and have identified the major issues on which they have differences. In this second set of comments, we will address the major issue areas that came up on our discussion and provide you with Meridian's comments regarding them. We expect that CSPA will address these issues in its own separately submitted comments on this preliminary draft permit.¹

¹ The CSPA/Meridian settlement agreement had contemplated the submittal of joint comments to the Regional Board. However, given the short amount of time available to comment on the preliminary draft permit and the schedules of the parties and their experts, the parties mutually agreed to submit separate comments.



James D. Marshall, P.E.
September 26, 2007
Page 2

With this preface, these are Meridian's comments on the proposed permit and accompanying fact sheet:

SPECIFIC MERIDIAN COMMENTS

PRELIMINARY DRAFT NPDES PERMIT

I. Facility Information

Meridian has no comments on these provisions.

II. Findings

Paragraph IIA: The first sentence of this section mentions a discharge of untreated wastewater; however, paragraph IIB indicates there is a treatment system. Meridian recommends removal of the word "untreated" from this sentence.

Paragraph IIB: The second sentence describes only the discharge of the water from the ODSs. Meridian recommends adding "... and excess water in Skyrocket Pit Lake" to the end of the sentence.

Table 5 on page 7: The current site WDRs acknowledge that baseline/pre-mine surface and ground water quality did not meet the water quality objectives for all of the beneficial uses designated in the Basin Plan (Findings 22 through 25 of CVRWQCB Order No. 5-01-040). Meridian believes that this is important contextual information for this NPDES permit and recommends including similar language with this table. We have the same comment for Page F-12 and Table F-7 of the fact sheet.

III. Discharge Prohibitions

Paragraph IIIG: If the required dilution ratio is too high, then the discharge would probably not achieve the objectives of the discharge with regard to controlling the site water and salt balance. In particular, it may not be possible to reliably lower the pit lake level to control ground water and control all the spring flows while meeting water quality objectives in Littlejohns Creek.

Proposed conditions and prohibitions in the preliminary draft NPDES permit (using a constant dilution ratio of 10:1 for the first three years and then 15:1 thereafter) show that the proposed discharge would not be effective in keeping the pit lake below 960 feet amsl. In fact, the pit lake levels stay almost as high as they are now (current lake level is typically between 965 and 970 feet amsl). Receiving water TDS concentrations during the proposed discharge are calculated to be about 600 mg/L, which means that there



James D. Marshall, P.E.
September 26, 2007
Page 3

exists significant additional assimilative capacity in the creek for salt. The results are similar for arsenic.

Meridian has evaluated alternative dilution ratios. A dilution ratio of 10:1 initially is needed for arsenic when the pit lake arsenic concentration is 0.1 mg/L (typical of the current concentration). For an arsenic MEC of 0.14 mg/L, the initial required dilution ratio is somewhat higher; after that, dilution ratios between 5 and 8 work for the foreseeable future because the arsenic concentration in Skyrocket Pit Lake ("SPL") reduces over time. TDS becomes the controlling constituent once the arsenic concentration has decreased.

Based on these evaluations, Meridian requests revisions to the preliminary draft permit requiring a dilution ratio of 10:1 for the permit duration (five years). Meridian recommends that an appropriate dilution ratio for later years can then be based on performance monitoring data collected during the permit period. As discussed above, the receiving water limitations are still met under this scenario.

This comment is relevant to, and should be applied in, numerous other locations in the permit, including the fact sheet at pages F-16 and F-20.

IV. Effluent Limitations and Discharge Specifications

Meridian addresses technology-based effluent limitations within the general comments later in this letter.

V. Receiving Water Limitations

Meridian has no comments on these provisions, except that Meridian addresses the lack of any legal requirement for a nitrate receiving water limitation in its general comments later in this letter.

VI. Provisions

Paragraph VIC.2.b: We request that you change "limitation" in the second sentence to "objective." A key objective of the discharge is to maintain the SPL level between 955 and 960 feet amsl to reduce or eliminate the potential dry season flows of poor quality water in Littlejohns Creek. However, during extended periods of drought, it may not be possible to maintain the SPL level within this range.

Paragraph VIC.3.a -- Submittal of a "Salinity Evaluation and Minimization Plan" and a "Surface Water Discharge Minimization Plan": Meridian recommends that these two plans be combined into one "System Performance Report" and that this be



James D. Marshall, P.E.
September 26, 2007
Page 4

delivered two years after the effective date of the permit in order to assure sufficient data is available. This report would evaluate the effectiveness of the system in meeting objectives, assess whether further measures to control surface flows are required and confirm some of the operational parameters such as mixing ratios.

ATTACHMENTS A, B, C and D

Meridian has no comments on these four Attachments.

ATTACHMENT E - MONITORING AND REPORTING PROGRAM

Table E-1 – Monitoring Station Locations: For EFF-001, the current design has three control valves instead of the original two.

Paragraphs VA.3 and VB.4: Meridian supports the use of fathead minnows for the acute and chronic toxicity testing based on the warm water habitat at the site and the lack of presence of salmonids such as trout.

Paragraph VA.3: The requirement to measure total residual chlorine seems unnecessary for this permit since disinfectants such as hypochlorite are not used and are not present in the water.

Section IX. Other Monitoring Requirements: The section header indicates that the section is not applicable, but there are requirements in this section.

Table E-5: Meridian requests that no monitoring be conducted at location RSW-03 (SWM-003), which is at the outfall of Flowers Reservoir, for two reasons. First, it is not possible to continuously monitor flow at this location because it is on the main channel of Littlejohns Creek on property owned by others. At best, Meridian can theoretically monitor, through estimation, flow during a sampling event. Second, since this location is at the outlet of the Reservoir, which is subject to a wide variety of other influences, it may not be a reliable indicator of the potential influence of Meridian's discharge.

Table E-6: There is a requirement to monitor chrysene which does not seem appropriate. Further, the fact sheet (e.g., pages F-21 and F-47) states that chrysene and several other PAHs, as well as BEHP and 1,2-dibromo-3-chloropropane, will be monitored and previous discussions with RWQCB staff indicated that such monitoring would be for the first year. While Meridian does not believe that these constituents are relevant to this discharge and that they should not require monitoring, the Monitoring Program in Attachment E does not include such monitoring.



James D. Marshall, P.E.
September 26, 2007
Page 5

The attachment indicates that Meridian needs to prepare a Sampling and Analysis Plan for the discharge within 60 days of permit adoption. Discharges are not expected to commence before the fall of 2008. Meridian therefore requests this report be submitted six months after permit adoption and three months before discharge occurs.

ATTACHMENT F - FACT SHEET

Table F-1: Table 1 of the permit states that this is a major discharge. It is not clear if RMKM's designation in Table F-1 as a "minor facility" is consistent with this. Also, there are no entries in the table for Threat to Water Quality or Complexity.

Section II. Facility Description: The last two sentences of the first full paragraph on page F-5 should be reworded as follows: "Evaluation and refinement of the discharge system and other closure measures must be undertaken by the Discharger to stabilize hydrology at the site."

Section IIA.1; first full paragraph on page F-6: The Gold Knoll ODS, like the West ODS, also has a series of concrete-lined ditches to direct water away from the sumps and reduce surface water infiltration through the ODS (text indicates only West ODS has this network, and that Gold Knoll ditches are limited to only keeping water out of the sump).

Section IVC.4.d: On page F-31, paragraph v, there is an MDEL calculated of 2924 mg/L calculated based on performance, but it is concluded that 4000 mg/L is a more appropriate effluent limit for TDS. It is not clear if the 4000 mg/L is actually a performance based limit that should be included in the list in this particular paragraph,

GENERAL MERIDIAN COMMENTS

Meridian provides the following general comments regarding the preliminary draft NPDES permit and accompanying fact sheet. These comments were discussed with CSPA in compliance with settlement provisions. The following comments respond to issues raised by CSPA during discussions between Meridian and CSPA on the permit. Since we have not seen CSPA's written comments on this permit (as they are being submitted at the same time as these comments), Meridian cannot respond directly to CSPA's written comments. The issues that Meridian's comments will address are: (1) the alleged need for putting a receiving water quality-based limitation for nitrate into this permit; (2) the mixing zone and dilution ratio portions of the permit; and (3) the appropriate technology-based effluent limitations for the permit.



James D. Marshall, P.E.
September 26, 2007
Page 6

I. Receiving Water Limitations For Nitrate

The preliminary draft permit does not contain a receiving water limitation for nitrate. The draft fact sheet explains (at page F-39) that nitrate is not considered a constituent of concern for this discharge because expected discharge nitrate levels are less than the primary MCL level for nitrate of 10 mg/L. Meridian believes that the Regional Board staff's decision not to include a nitrate receiving water limitation represents a correct analysis of the applicable Clean Water Act requirements.

The lowest potentially applicable California numeric water quality objective for nitrate of which we are aware is the 10 mg/L MCL standard. Nitrate is not listed as a toxic pollutant in the California Toxics Rule or in any equivalent federal rule and, therefore, there is no water quality standard for nitrates contained therein. *See* 65 Fed. Reg. 31682 (May 18, 2000). Moreover, there is no California inland surface water quality standard for nitrate, even though California has specified such standards for many other constituents. Indeed, if one examines the Water Quality Goals for Inorganic Constituents contained within the State Implementation Plan, there is no water quality objective of any kind for nitrate that is more stringent than 10 mg/L. CSPA apparently contends that a numeric receiving water limitation is necessary to implement the narrative water quality standards, but it has failed to provide any convincing factual or legal basis for this assertion.

Since the proposed discharge is projected to contain nitrate levels significantly less than the 10 mg/L level, there is no reasonable potential for this discharge to cause a violation of applicable state water quality standards. Accordingly, there is no legal requirement for the Regional Board to include a receiving water quality limitation for nitrate in this permit.

II. Mixing Zone/Dilution Ratio Questions

We generally understand that CSPA intends to raise several issues regarding the proposed mixing zone and dilution credits associated with this permit. Although we have not seen CSPA's written comments on these issues, we understand that they intend to address two areas: (1) the Regional Board staff's analysis of the mixing zone requirements; and (2) the internal consistency of the dilution credit calculations. We will briefly address each issue.

First, the draft fact sheet (at page F-20) does contain a discussion of the assimilative capacity of Littlejohns Creek and the mixing zone determination. It accurately notes that the Meridian discharge will not be a year-round discharge; rather, it will only be allowed to occur when flow rates are exceptionally high and creek flow is very turbulent. In addition, the fact sheet correctly notes that this discharge will be a "completely mixed" discharge under the State Implementation Plan due to the diffuser that will be installed, so the "completely mixed" discharge principles are the appropriate rules to apply with regard to the mixing zone. Thus, it appears from the material we have seen that the Board has applied the correct rules when



James D. Marshall, P.E.
September 26, 2007
Page 7

examining the mixing zone and associated dilution credit issues. Nonetheless, Meridian believes it would be useful for the fact sheet to contain a fuller explanation of the Regional Board staff's analysis on the mixing zone issue that led to the conclusions set forth in the permit.

Second, regarding CSPA's assertion that there is an internal inconsistency in the dilution credit calculations, Meridian has reviewed the approach presented in the preliminary draft permit that was used to develop the effluent limitations and understands this approach to be consistent with the procedures prescribed in the State Implementation Plan. The permit includes a discharge prohibition that sets constant flow ratios that are calculated based on receiving water limitations, baseline limits in the receiving water and the Maximum Effluent Concentration. Using this approach, arsenic was determined to result in the most restrictive flow ratio of 15:1, which is specified in the permit.

However, a lower initial flow ratio of 10:1 is allowed based on overall water quality benefits (as described on page F-39 of the preliminary draft permit). Further, Meridian has submitted information to the RWQCB indicating that the arsenic concentrations in the pit lake will decrease once the discharge is implemented due to the mixing of the lower-concentration ODS water with the Skyrocket Pit Lake water. Therefore, Meridian believes that the potential to exceed the receiving water limits in the creek with a constant flow ratio of 10:1 during the entire period of the permit is minimal. Further, a constant flow ratio of 10:1 does not relieve Meridian from the requirement to meet the receiving water limitations prescribed in the draft preliminary permit.

III. Technology-Based Effluent Limitations

The Regional Board staff has accurately summarized, in the proposed preliminary draft permit and fact sheet, the Clean Water Act legal framework for the determination of technology-based effluent limitations. At this time, all industrial sources are required to achieve best conventional pollution control technology ("BCT") for conventional pollutants and best available technology economically achievable ("BAT") for toxic and other (nonconventional) pollutants.

We understand that CSPA is taking two major positions: (1) that the proposed permit materials do not reflect an appropriate analysis of the requisite BAT effluent limitations for toxic and nonconventional pollutants; and (2) that the appropriate BAT for this facility is one or both of biological treatment using the Anoxic Biological Treatment system and a reverse osmosis system. However, for the reasons set forth below, neither of these CSPA positions is factually or legally justified.



James D. Marshall, P.E.

September 26, 2007

Page 8

A. Although the Proposed Permit and Fact Sheet Comply With The Law, Meridian Recommends That Regional Board Staff Provide Further Discussion of Their Technology-Based Effluent Limitation Determination.

The draft permit and fact sheet reflect that the Regional Board staff did assess the appropriate level of BAT for this permit, and the proposed effluent limitations represent the appropriate level of BAT for this industrial discharge. Both documents (permit at page 6, fact sheet at pages F-16 to F-17) correctly summarize the legal standards for imposition of such effluent limitations. Furthermore, the extensive analyses contained in these documents amply support the staff's resulting conclusions.

However, Meridian recommends that Regional Board staff provide within these documents a more extensive recitation of the legal framework and factor weighing that resulted in its BAT determination. We understand, from our knowledge of the Clean Water Act and the matters set forth in the draft permit document, that the Regional Board staff made the following analyses described below, which could be incorporated into the NPDES permit or the fact sheet, or both.

1. In Applying Its Best Professional Judgment To Determine The Appropriate BAT For This Facility, The Regional Board Examined The Unique Factors Relating To The RMKM Site.

In the Clean Water Act, Congress directed the U.S. Environmental Protection Agency ("EPA") to set uniform effluent standards for industrial discharges, whenever possible, on an industry-by-industry basis. Although EPA has set technology-based effluent limitation guidelines for many industrial categories, it has not done so for inactive mine sites such as RMKM.² Given the absence of national categorical technology standards (sometimes referred to as effluent limitation guidelines) for this type of source, the Regional Board (through its delegation from EPA) is required to use its Best Professional Judgment ("BPJ") to establish effluent limitations for this kind of discharge on a case-by-case basis. See 33 U.S.C. § 1342(a)(1)(B); 40 C.F.R. § 125.3(c)(2); *Natural Resources Defense Council v. EPA*, 863 F.2d 1420, 1424 (9th Cir. 1988).

When the Regional Board applies BPJ to determine appropriate technology-based effluent limitations for an NPDES permit, it follows EPA's regulatory standards for the use of BPJ:

² Significantly, if this was a discharge of mine drainage from an active gold mine site, the proposed Meridian discharge under this permit would appear to meet all of the specified BAT numeric effluent limitations required by EPA for this category of discharge. See 40 C.F.R. § 440.103.



James D. Marshall, P.E.
September 26, 2007
Page 9

Technology-based treatment requirements may be imposed through one of the following three methods:

* * *

(2) On a case-by-case basis under section 402(a)(1) of the Act, to the extent that EPA-promulgated effluent limitations are inapplicable. The permit writer shall apply the appropriate factors listed in § 125.3(d) and shall consider:

- (i) the appropriate technology for the category or class of point sources for which the applicant is a member, based upon all available information; and
- (ii) Any unique factors relating to the applicant.

40 C.F.R. § 125.3(c)(2)(emphasis added).

Thus, at the outset, a permit writer using BPJ to determine BAT is required to examine the unique factors relating to the applicant's facility. We perceive, in the Regional Board's analysis of the appropriate BAT for this discharge, that it took into account the following unique factors:

High Pre-Mining Background Salinity Levels

RMKM is located in an area, known as the Salt Spring Valley, with very high background levels of salinity and its constituent elements (total dissolved solids, sulfates, electrical conductivity) in the groundwater.

In its May 20, 2004 Order relating to this site ("2004 Order"), the State Water Resources Control Board ("SWRCB") found that "background water quality conditions in the area of the RMKM were variable, but poor." SWRCB Order WQO 2004-07, at 3. The Board observed: "Groundwater concentrations of total dissolved solids ("TDS") and other inorganic constituents above water quality objectives at many locations in the RMKM area are the result of salt-bearing geologic formations and are likely to have existed in groundwater prior to mining in the area." *Id.* The Board added that there is "naturally-occurring, highly mineralized surface and groundwater in the area of the Salt Spring Slate formation" and that "[s]oluble minerals from the phyllite have caused large areas of groundwater in Calaveras County to exceed water quality standards for TDS." *Id.* at 4.



James D. Marshall, P.E.
September 26, 2007
Page 10

The State Board technical staff produced a March 2004 report which identified the unusually high background TDS levels as a key site factor and which explained the technological futility and adverse environmental consequences of attempting to aggressively treat these salt levels:

According to the CVRWQCB, 24% of the monitoring locations at the site do not meet the secondary (taste and odor threshold) maximum contaminant level (MCL) for total dissolved solids "TDS). It is not completely clear how many of these monitoring locations exceed the TDS MCL due to natural conditions, but it appears that the majority is due to background conditions. Even in areas of good quality groundwater (e.g., well GWM-01 and local resident wells), where there is a thin, shallow layer of groundwater of good quality, under pumping conditions groundwater quality sometimes deteriorates as deeper mineralized water is captured. At many of the groundwater locations with high TDS, it is very likely that cleanup efforts would not only be extremely expensive, but would also be futile and may even exacerbate any TDS impacts caused by the mine.

Technical Report, The Royal Mountain King Mine, SWRCB/OCC File No. A-1569, at 1 (March 2004)("SWRCB Technical Report")(emphasis added).

These unusually high pre-mining salinity levels at the RMKM site are significant because this NPDES permit is being issued for a discharge from Skyrocket Pit that is composed largely of groundwater transferred from three spring seepage areas at the bases of the Gold Knoll and West Overburden Disposal Sites. These spring flows of poor quality groundwater contain high background TDS, electrical conductivity and sulfate levels that are not primarily due to Meridian mining activities – rather, these are inherent in the site hydrogeology. Thus, in determining an appropriate BAT level for the addressing salinity in the proposed discharge, it is essential that the Regional Board take into account the high background salinity levels already existing in site surface water and groundwater.

Potential Interaction Between Skyrocket Pit Lake and Littlejohns Creek

The Regional Board believes that, when the level of Skyrocket Pit Lake is above 955 to 950 feet above mean sea level ("amsl"), there may well be groundwater seepage from the area around the Lake into Littlejohns Creek, which sometimes results in the Creek flowing year round with high concentrations of TDS, arsenic and sulfate. These impacts are particularly pronounced in the low-flow seasons due to the constituents' concentration in smaller volumes of water, which thereby has a greater impact on beneficial uses. In contrast, during high flow periods such as storm events, the impact of these seepages is lessened due to the higher water volume.



James D. Marshall, P.E.
September 26, 2007
Page 11

Moreover, Littlejohns Creek has assimilative capacity for these high-flow pollutants during these periods.

In the 2004 Order, the SWRCB expressed its concerns regarding the impact of Skyrocket Pit Lake on downgradient areas. The Board stated: "The long-term threat to water quality from Skyrocket Pit is due to the increasing concentration of TDS and other pollutants resulting from evaporation of water impounded in the lake. Due to the stratification of water within Skyrocket Pit, water quality deteriorates at the lower depths. Impounding water in Skyrocket Pit results in creating a mound of poorer quality groundwater that emerges as seeps and springs in the downgradient area." 2004 Order, at 7.

The Regional and State Boards' view of the potential hydrologic interaction between Skyrocket Pit Lake and Littlejohns Creek is an important unique factor that must be considered when using BPJ to determine appropriate BAT for this facility. First, it is very important that Skyrocket Pit Lake levels be managed on a continuous basis so as to lower its level below the trigger levels identified above and thereby avoid the potential adverse impacts on beneficial uses of the poor quality groundwater to Littlejohns Creek, particularly during low-flow periods. Second, BAT for this site should take into account the fact that there is assimilative capacity in the creek during high flow periods that provides an opportunity for intermittent discharges that will not threaten beneficial uses.

No Acid Mine Drainage Issue

The RMKM facility does not have any acid mine drainage issue, which significantly distinguishes it from many inactive mine sites. The SWRCB Technical Report (at page 14) concluded as follows:

The most serious problem relating to metal mining is usually acid mine drainage and heavy metals. At the RMKM, acid drainage is not a problem because of the neutralizing properties of carbonate rocks at the site. Since acid mine drainage is not a problem, metals are not a major problem at the site either, with the exception of arsenic in the immediate vicinity of Skyrocket Pit.

The State Board has agreed with this assessment: "The discharges at issue from RMKM facilities contain low concentrations of the hazardous constituent arsenic, they do not pose an acid drainage problem, . . ." 2004 Order, at 15. Accordingly, when using its BPJ to determine appropriate BAT effluent limitations for this facility, the Regional Board must take into account this absence of an acid mine drainage issue.



James D. Marshall, P.E.

September 26, 2007

Page 12

Management And Closure Of The Site

It is important to keep in mind that the issuance of this NPDES permit is only one component of a multi-pronged strategy to close the RMKM facility. All portions of the closure must work smoothly together. This closure will require closing/managing waste units as an integral part of an overall strategy to address both groundwater and surface water flows across the property. Meridian has proposed a combined strategy that addresses individual waste units over time, along with capture, management and balancing of flows across the site to ultimately minimize and/or ultimately eliminate impacts to water quality while protecting existing beneficial uses.

One key component of this overall management system is the storage of combined/captured water flows in Skyrocket Pit Lake for management and release during high rain and flow events in Littlejohns Creek. Reducing Skyrocket Pit Lake levels to 955 to 960 feet amsl will:

- Reduce the risk of the SPL dam overtopping and uncontrolled flows causing impacts to Littlejohns Creek water;
- Alter groundwater hydrology by reducing the potential for surfacing groundwater;
- Improve water quality of flows in Littlejohns Creek during low flow periods by reducing or eliminating the upwelling of poor quality groundwater; and
- Reduce and minimize the volume of TDS or arsenic leaving the site, thereby improving water quality conditions within this reach of the watershed, during low flow and dry periods when these loadings would normally have the potential to have a small impact. During high flow periods, the incremental impacts of these loadings are minimal.

The NPDES permit issued for the RMKM facility must recognize, facilitate and be in harmony with this overall closure process so that the beneficial uses receive the best protection.

2. The Regional Board Also Evaluated Six Factors In Applying Its BPJ To Determine The Appropriate BAT Effluent Limitations For This Discharge.

When it applies its BPJ (with the unique site factors) in determining the appropriate BAT for this discharge, the Regional Board considers the six defined BAT factors contained in 40 C.F.R. § 125.3(d)(3): (1) the age of equipment and facilities involved; (2) the process employed; (3) the engineering aspects of the application of various types of control techniques; (4) process



James D. Marshall, P.E.

September 26, 2007

Page 13

changes; (5) the cost of achieving such effluent reduction; and (6) non-water quality environmental impact (including energy requirements).

The Regional Board, as the NPDES permit-issuing entity, is authorized to weigh these BAT factors in its discretion to determine the appropriate BAT. As one prominent case noted: "In enacting the CWA, 'Congress did not mandate any particular structure or weight for the many consideration factors. Rather, it left EPA with discretion to decide how to account for the consideration factors, and how much weight to give each factor.'" *BP Exploration & Oil, Inc. v. EPA*, 66 F.3d 784, 796 (6th Cir. 1996), quoting from *Weyerhouser Co. v. Costle*, 590 F.2d 1011, 1045 (D.C. Cir. 1978). EPA (and any agency issuing NPDES permits under an EPA delegation) is "governed by a standard of reasonableness in considering the [BAT] factors to be balanced." *Id.*

In addition, the economic test for BAT requires that the BAT limitations be both technologically available and economically feasible. 33 U.S.C. § 1314(b)(2)(B); *Rybachek v. EPA*, 904 F.2d 1276, 1290 (9th Cir. 1990). The permit writer has considerable discretion in weighing the technology's costs and is subject to a "reasonableness standard." *Id.*, at 1291. For example, in one case, a federal court upheld EPA's decision not to require reinjection of produced water as BAT, even though it was technologically feasible, because in weighing the BAT factors, EPA determined that it had unacceptably high economic and nonwater quality environmental impacts. *BP Exploration, supra* at 796.

In assessing the mandatory BAT factors for this facility, the Regional Board either expressly relied upon, or could have relied upon, these important BAT facts:

- From an engineering viewpoint, the proposed gravity discharge system embodied in the preliminary draft permit is a relatively simple, more durable, more reliable and lower maintenance system than other potential technologies, particularly for long-term operation. It will be less prone to failures than more complex systems and does not require an unusually high level of sophistication to operate. It can also accommodate improved methods of water quality management should they become established in the future.
- The capital and operating costs of the proposed discharge system are set forth in detail in the SES Alternatives Analysis. Although the costs are relatively expensive, they are significantly less costly than other alternatives with only incremental additional treatment potential. The proposed discharge system is economically achievable.
- The proposed discharge system provides water quality improvements which outweigh any temporary water quality impacts, particularly because the discharge will occur only during very short periods of time during high creek flows.



James D. Marshall, P.E.
September 26, 2007
Page 14

Without the discharge, Littlejohns Creek TDS concentration varies from 100 mg/L to over 3,000 mg/L (SWM-10, 2004 through 2007). With the discharge, many of the high concentrations will be eliminated as the hypothesized groundwater sources of high TDS water will be eliminated. During the relatively short discharge period, the concentration in Littlejohns Creek will be increased from a few 100 mg/L to under 1,000 mg/L. Accordingly, the discharge is expected to reduce, or potentially eliminate, the incidences of higher TDS in Littlejohns Creek.

- The discharge will not cause any erosion or increased sediment loading. The discharge occurs in an engineered diffuser system designed to prevent erosion and does not add significantly to the creek flood flows (i.e. less than 10%). The discharged water will have a lower sediment concentration than the receiving water and will actually reduce (not increase) the sediment concentration in Littlejohns Creek.
- The proposed discharge system will avoid the major non-water quality impacts of many of the technology alternatives. It will not be a major energy consumer because of the limited time each year it will operate. It does not require extensive brine ponds or other complex salt management systems that can cause a variety of other significant biological, air and transportation impacts.
- The proposed treatment system also recognizes the high background salinity levels in surface water and groundwater at the site, and does not require Meridian to treat to levels that are not sustainable given the site chemistry and hydrology. It focuses treatment on the constituents of concern at this particular site. The system also fits seamlessly into the overall water management plan for the RMKM site.

B. CSPA's Proposed BAT Technology For This Site Appears To Be Both Legally Flawed And Factually Unjustified.

The Regional Board staff has chosen an appropriate set of BAT effluent limitations for this proposed discharge based on a proper application of its BPJ to the six BAT factors. The staff required Meridian's consultants to submit an extensive Alternatives Analysis Report dated September 30, 2006 and it then had this material analyzed by an independent environmental consulting firm. These analyses led the Regional Board staff to determine that the appropriate BAT effluent limitations for the facility were as set forth in the proposed permit.

We understand, from discussions with CSPA, that it disagrees with the Board's determination of the appropriate BAT. CSPA engaged a consultant named Jim Kuipers to



James D. Marshall, P.E.
September 26, 2007
Page 15

prepare his own BAT analysis for the site, which we understand CSPA will be submitting in written form in connection with CSPA's comments on this draft permit.

Although Meridian has seen a draft version of the Kuipers study, it has not yet seen the final version and is unable to make any specific comments regarding its findings. Meridian plans to provide such comments once a final version of the study is available. However, in the meantime, Meridian offers the following general comments on the legal and technical approach that we understand will be reflected in the final Kuipers study:

- The application of BPJ, with its required consideration of unique applicant factors, to determine appropriate BAT for a particular discharge is a determination uniquely within the expertise of the permit issuing agency. In this case, Mr. Kuipers appears to be second-guessing the agency decision by deciding to apply different weight to the six BAT factors, and very little weight to unique site factors, thereby making a different BAT determination than the Regional Board does. However, the courts have emphasized in this Clean Water Act context that the "reviewing court should be at its most deferential in reviewing an agency's scientific determinations in an area within the agency's expertise." *Natural Resources Defense Council v. EPA*, 863 F.2d 1420, 1430 (9th Cir. 1988).
- The Kuipers report appears to be based on an incorrect assumption that the maximum amount of pollutant removal is the only important criterion for determining BAT effluent limitations. However, as one court pointed out in this context: "the CWA's requirement that EPA choose the 'best' technology does not mean that the chosen technology must be the best pollutant removal. Obviously, BAT . . . must be acceptable on the basis of numerous factors, only one of which is pollution control." *BP Exploration & Oil, Inc. v. EPA*, 66 F.3d 784, 796 (6th Cir. 1996).
- We understand that one of the technologies which the Kuipers report may choose as the appropriate BAT for this site is the Anoxic Biological Treatment system. However, since this system is primarily designed to remove nitrates from a discharge stream, since there is no reasonable potential for a violation of nitrate water quality objectives and since the system is reportedly not consistent or effective in removing TDS, this system does not appear appropriate for this site. Moreover, it has major non-water quality environmental impacts, including large energy costs, air/odor impacts and transportation issues, that make it unattractive as a potential BAT.
- We also understand that the Kuipers report may select some form of reverse osmosis system as the BAT for this site. The SES Alternatives Analysis explained in great detail the major factors which make reverse osmosis an



James D. Marshall, P.E.
September 26, 2007
Page 16

inappropriate BAT for this site. Moreover, it is important to keep in mind the following finding in the State Board Technical Report (at page 3), made in the closely similar context of site groundwater contamination: "To remove salt from groundwater, the Discharger would need to pump groundwater and treat the extracted water with reverse osmosis, an expensive, energy-intensive remedial measure that would generate a waste brine that would likely be 3 to 10 times saltier than the extracted groundwater. The resultant brine would then have to be disposed of without adversely affecting water quality. As discussed previously, pumping groundwater would likely exacerbate TDS pollution, thereby rendering complete groundwater cleanup technologically infeasible." These same reverse osmosis factors – extremely high cost, high energy requirements, disposal impacts of the concentrated brine – also are critical when making a BAT determination for this discharge.

- In general, the version of the report viewed by Meridian understated the costs of the biological treatment and reverse osmosis systems, ignored or de-emphasized the significant non-water quality environmental impacts of the chosen systems (such as the major environmental issues resulting from onsite and offsite management of the high TDS brine from a reverse osmosis system, which is particularly important given the fact that the selected system will probably need to operate for many decades), and did not pay enough attention to each of the six BAT factors.

In short, the early version of the Kuipers report seen by Meridian did not provide the type of balanced BAT analysis, with a careful consideration of site-specific factors, that is required by the Clean Water Act and its implementing orders and regulations. We are planning to provide the Regional Board with further comments on the final Kuipers report once it has been received and reviewed.

Please let Tom Patterson of SES or me know if you would like to discuss any aspect of Meridian's comments.

Sincerely,

Paul P. "Skip" Spaulding, III

PPS:bd

Attachment



James D. Marshall, P.E.
September 26, 2007
Page 17

cc: Mr. Edgar Smith
Mr. Ian Hutchison
Mr. Tom Patterson
Darlene Ruiz, Esq.
Bill Jennings
Michael Lozeau, Esq.

19930\1344317.1